

## REMARKS

Claims 12-21 are pending in this application.

Claims 12-21 are rejected

Claims 12-21 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of U.S. patent No. 6,288,010.

A terminal disclaimer in compliance with 37 CFR 1.321 is enclosed to overcome the obviousness type double patenting rejection.

Claims 12,14-15 are amended. Claim 12 in line 1 of (b) "polymer with" has been changed to "polymer which". Claim 14 has been amended to correct the spelling error for "aqueous". Claim 15 "intrinsic viscosity of of" has been changed to "intrinsic viscosity of".

Claims 12-21 are rejected under 35 U.S.C. § 103(a) as being obvious in view of EP 586911.

Examiner states in the April 14, 2003 reply that EP '911 teaches all the components of composition as presently claimed.

The Applicants respectfully disagree. EP '911 does not disclose the particular ratio of anionic monomer to nonionic. The Examiner has selected from a generic disclosure the particular copolymer of the instant invention, including a ratio of monomers not exemplified in the instant invention. Further, the examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of the invention to optimize/manipulate the relative content of the anionic polymer and ionic fertilizer of EP '911 to treat soil as claimed (see page 3, paragraph 2 of Office Response mailed on 07/26/01). Hence, the Examiner equates the polymers exemplified in EP '911 with the instant invention.

It is well known from the literature that the degree of ionization of a particular polymer and the addition of electrolyte to the aqueous solution significantly affects the viscosity. (See enclosed copy of

*Textbook of Polymer Science*, 3<sup>rd</sup> ed., Edited by Fred W. Billmeyer, Jr., A Wiley Interscience Publication, 1984.)

Polymers with ionizable groups along the chain, termed polyelectrolytes, normally exhibit properties in solution that are quite different from those with nonionizable structures.....

...the ionic charges attached to the chains create regions of high local charge density, affecting the activity coefficients and properties of small ions in these localities. Although the various effects cannot be separated completely, the results of chain expansion are of primary interest for the measurement of molecular weight and size.

Those properties depending on the size of the chain, such as viscosity and angular dependence of light scattering, are strongly affected by chain expansion. The viscosity may even increase markedly as polymer concentration *decreases*, with consequent increase in the degree of ionization of the polymer.

As shown in the above literature, % ionic charge of the polymer matter a great deal in determining viscosity. The Applicant avers that there is no suggestion in EP '911 that a copolymer made up of the Applicants' ratios of ionic and nonionic polymers in combination with an ionic soil nutrient would be deliverable to the site of soil stabilization from EP '911, particularly in a single pack product at a concentration sufficiently high to provide appropriate fertilization and soil stabilization. The Applicants states in the disclosure, page 2 that polyacrylamide with 20 to 30% anionic produces highly viscous solutions at 2 % concentration. Examiner asserts it would have been obvious to experiment with the anionic content. However, there would have been no motivation to do so since increasing the % anionic content would normally give an increased viscosity which would make the solutions too viscous to deliver via an irrigation system.

Furthermore, EP '911 teaches compositions that must contain a redox couple in order to crosslink the polymer to form a stable gel. The Applicant emphatically disagrees that this reference would make obvious compositions that do not contain the redox couple.

Reconsideration and withdrawal of the rejection of claims 1, 6-8, 10, 11 and 17 is respectfully solicited in light of the amendments, terminal disclaimer and remarks *supra*.

Respectfully submitted,



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Enclosures: Request for Continued Examination under 37 CFR 1.114.

Form PTO-1449

Reference-*Textbook of Polymer Science*, 3<sup>rd</sup> ed., Edited by Fred W. Billmeyer, Jr., A Wiley Interscience Publication, 1984,

Petition for Extension of Time.

Terminal Disclaimer in compliance with 37 CFR 1.321

Translation for JP Sho 51-124578